CLAIMS

I claim:

1. A screen-printing apparatus, comprising:

a platen for supporting a workpiece; and

at least one print head having a print screen frame including a screen attached to the frame, the frame having a plurality of edges;

a clamp having a reciprocating clamp portion and a stationary clamp portion mounted to the print head, the reciprocating clamp portion and the stationary clamp portion being adapted to cooperatively engage an edge of the frame;

at least one pneumatic cylinder having a piston and a piston rod, the piston rod having two opposing ends, one end of the piston rod being connected to the piston, the opposite end of the piston rod being connected to the movable clamp portion, the piston and connected piston rod being movable inside the cylinder, the piston defining two chambers inside the cylinder;

a two position, 4-way, normally closed/normally open valve having an inlet port, a first outlet port, a second outlet port, and a single direction throw with pinned lever;

an air distribution system connecting the first and second outlet ports of the valve to the first and second chambers, respectively of the at least one pneumatic cylinder; and

a main air supply system for distributing air to the valve, the main air supply adapted for receiving a supply of pressurized air from a source in an amount sufficient to activate the at least one pneumatic cylinder.

2. The screen-printing apparatus according to claim 1, wherein the air distribution system further comprises a first and second air manifold, each manifold having an inlet and at least two outlets, the inlet of the first air manifold being connected to the first air outlet of said valve, and the inlet of the second air manifold being connected to the second air outlet of said valve, the outlets of the first air manifold being connected to the first chamber of the at least one pneumatic cylinder, and the outlets of the second air manifold being connected to the second chamber of the at least one pneumatic cylinder.

3. The screen-printing apparatus according to claim 1, wherein said main air supply system further comprises a pressure gauge and a stem extending therefrom, the stem having a stationary part and a part rotatable about the stationary part, the rotating part adapted for being received by an air hose.

4. The screen-printing apparatus according to claim 1, wherein said at least one print head comprises four print heads.

5. The screen-printing apparatus according to claim 1, wherein said reciprocating clamp portion is made of aluminum.

6. The screen-printing apparatus according to claim 1, wherein said at least one pneumatic cylinder is adjustably mounted to said print head.

7. The screen-printing apparatus according to claim 1, wherein said at least one cylinder comprises two pneumatic cylinders operating in parallel, whereby the piston rod of each cylinder is connected to the moveable clamp portion of said clamp.

8. The screen-printing apparatus according to claim 7, wherein said valve is mounted above said clamps and between said pneumatic cylinders.